

Fluid Transfer Standard Support Module (SSM)

General Overview of the Fluid Transfer Standard Support Module (SSM)

The Fluid Transfer SSM provides a common and accurate method for transferring samples, solvents, and other liquids between Standard Laboratory Modules (SLMs). It can be used as a liquid-routing switch, the primary method for moving fluid within an SLM, or for tasks such as providing several different types of solvent to a common location. The SSM is self-cleaning and can provide cleaning solvents to SLMs. The SSM can also provide ultra-high-purity nitrogen (or other selected gas) to help clean and dry lines or to ensure all the sample is removed from the lines and valves. The Fluid Transfer SSM can support single SLMs or share time among several SLMs.

Environmental Protection Agency (EPA) Method

This SSM will support all Contaminant Analysis Automation (CAA) systems for environmental cleanup.

Standard Analysis Method (SAM)

The Fluid Transfer SSM supports all SAMs as required.

Advantages

This SSM can eliminate many robotic transfers of glassware, thus providing waste minimization advantages. Cross-contamination testing with low levels of target analytes has shown this module to be very clean.

General Description of the Fluid Transfer Standard Support Module (SSM)

The instrument is capable of performing tasks autonomously or in combination with other CAA modules. It has five inputs and four outputs available. In the standard configuration, two of the inputs and one output are dedicated to gas, clean solvent,

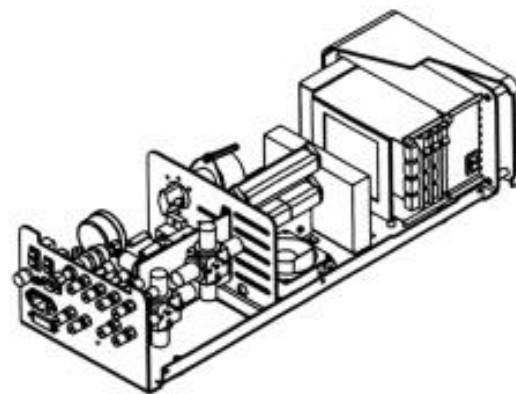


Figure 1. Fluid Sample Transfer Standard Support Module.

and waste solvent, respectively. If desired, the solvent lines can be reconfigured for other uses; however, the only changes allowed for the gas input would be the type of gas used. The SSM has a pumping capacity of up to 50 mL/min through 1/8-inch Teflon tubing. The pump has positive displacement with a ceramic piston and cylinder. The line pressure is limited to 20 psi, which is the working pressure of the valves. The pumping (line) pressure is monitored with a pressure switch.

The SSM is controlled by an STD Bus computer with all the operational programming resident on the unit. Communication with the outside world is provided through the IEEE-488 communication standard. Programming the internal computer is achieved through an RS-232 communication port connected to a personal computer.

Status

In addition to supporting the overall Office of Technology Development CAA Program, the Idaho National Engineering Laboratory (INEL) CAA team is applying this technology to industry partners, other government agencies, and the Remote Analytical Laboratory that the CAA is currently pursuing. The overall objective is to

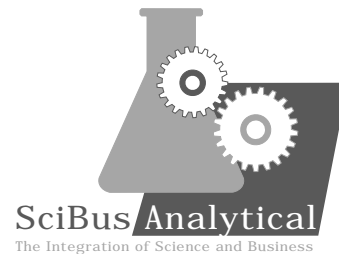
transfer this technology into industry, where it can be developed and marketed. The Transfer SSM is currently available for licensing. Other arrangements such as Cooperative Research and Developments Agreements are negotiable.

Industrial Partner

SciBus Analytical, Inc.

Developers

Office of Research and Technology
Applications, Idaho National Engineering
Laboratory.



University of Florida
University of Tennessee
University of Texas

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